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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/801,424	03/16/2004	Ruizhong Hu	W9570-01	2056
30633	7590	06/28/2006	EXAMINER	
W.R. GRACE & CO.-CONN. 7500 GRACE DRIVE COLUMBIA, MD 21044			SAMPLE, DAVID R	
			ART UNIT	PAPER NUMBER

1755

DATE MAILED: 06/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/801,424	HU ET AL.	
	Examiner	Art Unit	
	David Sample	1755	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-71 is/are pending in the application.
- 4a) Of the above claim(s) 45-71 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>20041115; 20050110</u> . | 6) <input checked="" type="checkbox"/> Other: <u>IDS 20051020</u> . |

DETAILED ACTION

Election/Restriction

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-44, drawn to a cracking catalyst composition, classified in class 502, subclass 60.
- II. Claims 45-51, drawn to a catalytic cracking process, classified in class 208, subclass 108.
- III. Claims 52-71, drawn to method of making a catalyst, classified in class 502, subclass 439.

The inventions are distinct, each from the other because of the following reasons:

Inventions in Group I and II are related as composition and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the composition as claimed can be practiced with another materially different composition or (2) the composition as claimed can be used in a materially different process of using that composition. See MPEP § 806.05(h). In the present case, the product as claimed can be used in a materially different process of using the product such as hydrogenative catalytic cracking in absence of a sulfur compound.

Inventions in Group III and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)).

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In the instant case, the product as claimed can be made by a materially different process such as starting with a zeolite containing greater than 0.5 wt% Na₂O, combining a Lewis acid containing component with the zeolite and subsequently treating the combination to obtain a catalyst containing less than 0.2 wt% Na₂O.

Inventions in Group II and III are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different designs, modes of operation, and effects (MPEP § 802.01 and § 806.06).

In the instant case, the catalytic cracking process uses different operating conditions, feed stock, and products. The method of making the catalyst uses different operating conditions, steps, starting material, and finished product.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Attorney Charles A. Cross on 06/02/06 a provisional election was made with traverse to prosecute the invention of claims 1-44.

Affirmation of this election must be made by applicant in replying to this Office action. Claims 45-71 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the

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application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 112

Claims 1-44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites that the catalyst “further comprises 0.20 percent by weight or less Na₂O.” The phrase “further comprises” implies that the catalyst must contain Na₂O. In contrast, the range “0.20 percent by weight or less” has zero as a lower limit, making Na₂O an optional ingredient. Thus, the claims are indefinite as to whether Na₂O is an optional or required component.

Claims 2-44 are rejected for failing to correct the deficiencies of claim 1.

Claim Rejections - 35 USC §§ 102/103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-7, 13, 15, 24-31 and 38 are rejected under 35 U.S.C. 102(b) as being anticipated by Madon et al. (WO 93/19138).

Madon et al. discloses a catalyst comprising alumina, and zeolite Y having a unit cell size of less than 24.29 Å. See the abstract. The catalyst contains lewis acid sites. Id. The catalyst contains less than 0.1% by weight or less Na₂O. See page 3, lines 15-17 and page 5, lines 15-19.

The recitations of instant claims 2-7, and 29 can be found in the reference at page 3, lines 15-17 and page 5, lines 15-19.

The recitations of claim 13 can be found in the reference in the abstract.

The recitations of instant claim 15 can be found in the reference in the abstract.

The recitations of instant claim 24 can be found in the reference at page 3, lines 13-15.

The recitations of instant claims 25, 27 and 28 can be found in the reference at page 3, lines 8-13.

The recitations of instant claim 30 and 31 can be found in the reference at page 6, lines 24-28.

The kinetic conversion activity properties of instant claims 29 and 38 are assumed to be inherent to the reference because the catalyst composition of the reference is identical to the presently claimed composition.

The reference does not disclose the property limitation of "capable of being maintained within a fluid cracking catalyst unit used in cracking hydrocarbon feedstock containing organic sulfur containing compounds." The catalyst of the reference is identical to the present catalyst.

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Therefore, the reference catalyst is presumed to inherently possess the same properties including ability to operate in a fluid cracking catalyst unit. See MPEP 2112.

Claims 1-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakaoka (US 5,686,374).

Nakaoka discloses a catalyst containing zeolite Y, alumina, and zinc oxide. See the abstract. The catalyst contains less than 0.5 wt% Na₂O, which overlaps the amount of Na₂O recited in instant claims 2-7, 29 and 33-36. See the abstract. Overlapping ranges have been held to establish *prima facie* obviousness. See MPEP 2144.05.

The reference does not disclose that the alumina/zinc oxide components contain Lewis acid sites. However, these materials are the same as the presently claimed components and therefore must have the same properties including Lewis Acid sites.

As to claims 8-12, Nakaoko employs HY and USY. See col. 3, lines 8-33.

The recitations of instant claim 13 can be found in the reference in the abstract.

As to claims 15-22 and 37, the reference employs alumina/zinc oxide. See the abstract.

As to claims 25, 27 and 28, Nakaoko discloses catalysts that contain, for example, 63 wt% alumina and zinc oxide. See Table 2, col. 9.

Conclusion

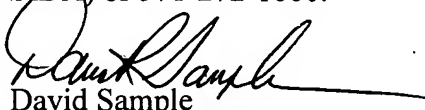
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Sample whose telephone number is (571)272-1376. The examiner can normally be reached on Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (572)272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


David Sample
Primary Examiner
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